

Language Learning with Machinima: Video Production in 3D Immersive Environments

Michael Thomas, University of Central Lancashire, UK
Christel Schneider, University of Central Lancashire, UK

ABSTRACT

This chapter reports on research arising from a two-year project involving nine European partners entitled, "CreAting Machinima to Empower Live Online language Teaching and learning" (CAMELOT), funded by the EU Lifelong Learning Programme. The project investigates the use of machinima (or recorded videos made in an immersive environment) with a project-based approach. Findings arising from interviews, questionnaires, and observation with teachers and learners, have been used to reflect on the potential of machinima to stimulate learner creativity in authentic immersive environments.

INTRODUCTION

Video is becoming one of the most powerful ways of communicating learning content in the digital age. An increasing number of learners across all educational sectors use digital video as the favoured means of communication (Brooke, 2003). The CAMELOT project (<http://camelotproject.eu/>), which includes partners from the Czech Republic, Germany, the Netherlands, Poland, Turkey, and the UK, derives from a shared interest in the use of a new generation of cost effective digital video tools and applications to support language learning in a European context (Shrosbree, 2008).

One aim of the research project is to raise awareness of the term *machinima* — a portmanteau word that combines *cinema* and *machine* and refers to filming actions, simulations, role-plays and dialogues between 3D virtual characters or avatars within an immersive virtual environment. In the wider context of digital gaming in particular, a search on YouTube reveals how videos from <http://machinima.com> regularly attract hundreds of thousands of viewers. In the context of language learning, learners and instructors can adopt a similar format to engage in a variety of preparation and planning tasks in the target language, such as rehearsing, scripting, and storyboarding (Ohler, 2007). Following this, learners progress to filming and editing their machinima productions in order to construct sophisticated video narratives as part of a project-based approach involving tasks. This process enables learners to develop a range of skills in addition to those targeting traditional linguistic structures, such as intercultural communication and digital literacy.

Compared to language learning conversations recorded with traditional technology, there is a distinct difference in the case of recording in virtual worlds (VWs) such as Second Life, where students can learn foreign languages in simulations of culturally specific locations (e.g., learning English in virtual London or German in a reconstruction of Berlin). In the latter, learners can join online environments and navigate to the virtual site where original machinima were shot and re-enact the conversation with their own avatars. These virtual locations are independent of the real-world classrooms where the learners plan and storyboard their activities. This spontaneous activity underlines why the process can be referred to as "live video production."

The distinctive foci of the CAMELOT Project are evident in four main development areas:

- Promoting language learning in authentic virtual environments with a project-based approach utilizing tasks;
- Developing teachers' and learners' skills in real-time animation video production;
- Field testing machinima across four educational sectors (e.g., schools, higher education, adult education, and vocational education);
- Producing a teacher training course aimed at educating teachers in the technical and pedagogical skills required to use machinima in language learning.

Machinima can be used to record authentic conversations in situated learning contexts. The technical challenges of producing real-time animated videos in 3D environments are not to be underestimated, however. Traditional film production techniques include recording, camera control, editing, storyboarding, costume design, designing settings and drafting scripts and therefore a pre-requisite is an awareness of 3D environments and their inherent technical challenges (Brewster, 2009). After editing, machinima are uploaded to video sharing sites such as YouTube and can then be played on mobile devices by interested learners.

The chapter analyses data arising from language teachers' and learners' perceptions during the development of machinima and their reflections on the challenges and opportunities presented by this form of video production. Based on data arising from interviews, questionnaires and classroom observation with EU teachers and learners, the chapter aims to contribute to research on the use of machinima in language learning, as well as provide practical guidance to teachers interested in exploring this technology for their own classes.

RESEARCH APPROACH

The use of digital video to support language learning or serve as an inspiring resource in self-directed online learning programmes, blended learning courses and flipped classrooms, has become increasingly popular in recent years. According to Brewster (2009) video is the most popular medium among young learners, and the so-called "YouTube generation" retain information far more effectively from video-based instruction rather than spoken text.

The CAMELOT Project aims to promote learning in immersive environments, make access easy through simple and visual instructions, and trigger interest in learning and teaching in VWs by demonstrating what can be achieved through learning and teaching with machinima. The objective is that teachers and learners understand the benefits and challenges of learning in 3D worlds and that machinima can be utilised as a tool for reflection, assessment and feedback. Furthermore, we anticipate that the research will showcase how the process of creating machinima collaboratively in a virtual learning space can motivate learners to interact and learn autonomously, while improving their language skills.

Prior to the field testing phase of the project, each of the partners provided machinima that were evaluated by the consortium before being implemented in the real or virtual classroom. The testing groups recruited by partners of the project consortium included military staff from the National Defence University in Poland, Erasmus students, university students, school children, and learners in vocational education studying in Polish, Turkish, Czech, English, and German. The field testing groups used machinima in their language lessons, regardless of whether the teaching took place in VWs, 2D environments, or physical classrooms. Even though the field testing was originally meant to take place in VWs, it was evident as a result of needs analysis, that some language teachers might not have had experience with teaching in VWs or creating machinima. In this case the machinima were provided by professional machinimatographers in accordance with their lesson plans and course curriculum. Some technical challenges were also to be expected depending on location, equipment, and bandwidth.

A mixed methods approach was used to collect data. Questionnaires completed by teachers and learners prior to and after the course provided evidence of the effectiveness of the machinima tested in terms of student engagement and motivation. Qualitative data in the form of interviews and focus groups elicited learners' and teachers' experiences with machinima and explored what they learned and how this differed from other forms of learning. The combination of research methods proved effective in eliciting a wide range of data and the results of the field tests formed the basis for guidelines for the teacher training course.

REFLECTING ON TEACHERS' USE OF MACHINIMA

In one of the interviews undertaken for the research, Meyers (CAMELOT Project, 2014a), for example, indicated that teenage students can use machinima to practice listening skills and that machinima-based resources provide opportunities for learners to engage

with authentic language learning environments. Experienced teachers suggested that one of the potential advantages of machinima is that they can be created quickly and easily when needed, especially if resources are not available for a specific purpose, or when teachers are looking for an *ad hoc* illustration of a grammar point, a particular set of instructions or a specific situation (Schneider & Rainbow, 2014). As Meyers (CAMELOT Project, 2014a) explained further in her interview, building on a visual approach to learning, machinima can be used to demonstrate a particular point rather than to merely rely on spoken words to explain it. Teachers who used ready-made machinima, as well as those creating their own personalized videos in response to particular learning contexts, indicated that they used them to focus on a specific language area such as topic based vocabulary, words in context, grammar, listening or writing skills, or as an introduction to a new topic (CAMELOT Project, 2015b, 2015c). On the other hand, creating their own machinima was considered to be quite demanding for those teachers who either did not have the necessary IT skills and equipment (CAMELOT Project, 2015c) or were not supported by their school or institution. Some teachers argued that a wide range of good quality machinima could already be found on the web, so they did not see the need to create new ones. Another related finding was that ready-made machinima may be restrictive when a variety of different teaching and learning styles are being used. Nevertheless, teachers who produced their own machinima were eager to apply them in their own teaching contexts, indicating that it gave them more control, as well as the ability to adapt them to the personal context of their learners (CAMELOT Project, 2015b).

While it is beyond the scope of this chapter to discuss all possible uses of ready-made machinima in the classroom, one example entitled, "Cultural Collision in Cairo", created by teachers at the MachinEVO Workshop in 2014, has been chosen to illustrate how the use of machinima can provoke controversial views among teachers (CAMELOT Project (2014c). Introduced to a group of teachers in a workshop, the machinima triggered controversial discussions about its suitability for teaching, the language level it could be used for, and multicultural learning environments, as well as the appropriate amount of background information required by learners to contextualise the machinima. However, for others the lack of background information was regarded as an effective learning point as learners would have to apply their problem-solving skills to discover what the problem was and what the background might have been. Such an approach could be used to encourage learners to reflect on their own culture as well as those of the target language. While the lack of facial expressions and natural gestures was seen as one limitation associated with the avatars used in the machinima, it was considered an interesting experiment to produce a video with the same content by filming people in real life and find out what difference this would make with regard to the flow of discussion and people's perception of the process. Those teachers involved in the production of the video reported that their students enjoyed watching them and that the discussion resulted in an interesting discussion about their own experience with different cultures and stereotypes.

Other teachers who dealt with the topic in their face-to-face teaching reported similarly encouraging results. The use of machinima to engage teachers and learners in reflections about cultural difference and personal attitudes was thus one positive outcome of the use of digital video in these authentic cultural contexts.

GETTING THE LEARNERS INVOLVED IN FILMING

Teachers involved in the CAMELOT Project reported that their learners engaged more in task-based scenarios when they were fully involved in the process (CAMELOT Project, 2015a; Schneider, 2014a, 2014b). Working towards a final product by creating a machinima collaboratively helped learners to practice their language skills and improve their interpersonal skills. Teachers identified how learners used machinima to engage in a range of activities to:

- report on a place they had visited in an immersive environment;
- give a presentation by using pictures or screen capture video;
- show short video clips taken during an immersive visit and describe places or events;
- set up an exhibition in a virtual environment and film the event;

- make a machinima of something they had built in-world;
- conduct interviews with people they had met and record them for later viewing;
- create scenarios or role-plays in the target language and record them.

The recorded activities were analyzed by students and the teacher facilitating the lesson and specific elements were re-filmed or re-visited, thus providing opportunities for reflection, error correction and language revision (Barrett, 2006). In this respect, the production progress was perceived as potentially more valuable than the product. Making machinima provided evidence to the students of their language learning activities and skills and led to reflections which could be integrated as part of the course evaluation.

Meyers' interview (CAMELOT Project, 2014a) described a special technique for engaging her students in filming in which her students produced part of a film in front of a green screen in a physical classroom before using a background from virtual learning environments to give the videos a more professional touch (Schools Media, n.d.). As Meyers explained, not all students like to be filmed and appear in front of a public audience; however, in order to avoid developing anxiety, learners were able to choose the role they would like to play, whether they wished to be filmed as a real person, or use an avatar or mask. She commented further that some students preferred to stay in the background, move the camera or play an object, while others sought to pose in real life. Hence there was a role for everyone and as a consequence all students became engaged with the role they had chosen. Meyers considered the production process a significant achievement for the learners as they were immersed in the target language throughout, engaged in creative collaboration with each other, practiced reading, writing, and speaking skills, and most importantly, perceived the experience as enjoyable (Schneider, 2014a, 2014b).

USING MACHINIMA IN THE CLASSROOM

Having discussed reflections based on data from expert interviewees and a needs analysis questionnaire with teachers, in this section we turn to considering observation data arising from a language class involving an international group of language learners. The observation was carried out by the author and instructor of the language course. The data were collected prior to, during, and after the course, including students' feedback. The language level of the group ranged from beginners (A2) to intermediate (B1) according to the Common European Framework of Reference (CEFR), and six participants from Germany, France, Spain, Korea, the UK, and Portugal from 23 to 50 years old were observed. The virtual world of Second Life (<http://www.secondlife.com>) provided the learning environment for a series of three ninety-minute synchronous learning sessions.

In order to prepare for their synchronous sessions in-world, discuss suggestions for possible dialogues to perform, and agree on characters and roles, a variety of media were used between the sessions. This included a specifically designed hotel website which contained not only hotel information, but also ideas and suggestions for typical phrases used in the context of booking a room, checking in, asking for information, and making complaints (www.waldschloessen.jimdo.de). The website was designed to serve both teachers and students in order to share ideas about roles, characters and activities, and included suggestions for assessment. Furthermore, in order to interact between the live sessions, learners used Facebook, Google Docs and IM messages within Second Life. Notecards with tasks and dialogues were also exchanged in Second Life, which formed the basis of the virtual real-time sessions.

The course followed a broadly project-based approach involving a definition of "task" in which meaning was primary. The tasks sought to engage learners by enabling them to choose their own topics of interest, and there was a clear goal. The scenario chosen for this specific task involved checking-in at a hotel, and as this was widely-understood, it enabled the instructor to find the appropriate language level in the context of a heterogeneous group of mixed abilities (see Figure 1).

[Insert Figure 1 here]

Figure 1. Checking-in at the hotel

The three sessions involved a series of interrelated tasks: booking a hotel room, checking-in, asking for specific information (for example, availability, costs, tourist attractions, could pets stay in the rooms, etc.), writing emails, taking notes and making complaints. Students at the beginner level needed specific support in terms of vocabulary and phrases before getting started with the role-play task, while more advanced students required more basic information about the scenario and characters in order to prepare their roles.

In this scenario, the participants created a dialogue about a couple arriving at a romantic hotel for their honeymoon, where they discovered rats running about in the hall and in some of the rooms. Some of the preparation for the role-play took place outside Second Life as learners were asked to search for appropriate information from the hotel website, prepare relevant dialogues and share them via notecards in the virtual world or on Google Drive. After vocabulary and sentence structures had been discussed and understood by everyone, the scene was rehearsed (see Figure 2). Before the role-play started, one of the learners, who was already familiar with the hotel, guided the group through the various rooms. The tour included the bar, some hotel rooms, the blood stained attic with rats running around, a shelf full of skulls, a ghost floating through the walls, and outdoor toilets and showers.

Afterwards the learners discussed their experience of the tour. After familiarizing themselves with the scenario the learners decided their roles and carried out the role-play which was recorded. The recording was then sent to all participants after the session with the request to provide feedback on language-related issues and episodes (e.g., pronunciation, intonation, etc.).

[Insert Figure 2 here]

Figure 2. Avatars interacting in a dialogue

Learners sent feedback about the machinima and their performance prior to the follow-up session and also shared their experience on the group's Facebook page. In order to update those students who missed the session, the machinima were watched together in a relaxed atmosphere around a campfire in Second Life to encourage learner reflection and collaboration. Learners were asked to reflect on their performance and experience and first impressions were collected and discussed. It was notable that the students reflected on their performance in the video rather than on their language performance, a finding supporting Falconer (CAMELOT Project, 2014b), who considered machinima as a powerful way to visualize learner experiences and to stimulate feedback on the process of creation. The power of these reflections was demonstrated by one of the participants who pointed out that some scenes evoked childhood memories of her grandmother's home when she was a child, a point illustrating both the situational and interactive authenticity of the virtual world and the imaginative stimulus it can provide in a language learning context.

Reading a dialogue from a script was considered less challenging than speaking without notes, as one learner commented that this even gave the impression of being fluent in the language in the video. Just one participant indicated that he would need more time to practice his pronunciation and intonation. Nevertheless, participants admired each other's performance and praised each other for their acting skills. Everyone enjoyed the experience and commented very positively on the activity in spite of the technical quality of some of the machinima created. Although some learners were not involved in the filming, they felt highly involved in the process and enjoyed their roles as actors. The follow-up tasks involved writing an email to the hotel manager complaining about the rats, the outdoor toilet and other unpleasant findings. During the sessions the teacher observed some weaknesses in communication and provided those participants who were less eloquent in the target language with mix and match phrases to practice and create simple dialogues to scaffold their attempts at communication. Moreover, the teacher added captions to the 3D video recording with the correct phrases as well as some audio explanations and pronunciation for difficult words at the end of the video. This was considered as very useful as the participants could listen to the recording as often as they wished comparing their speech and that of others with the speech bubbles.

The follow-up activity where students performed the same dialogue clearly demonstrated improvements in their oral performance. The students were then motivated for further challenges and tried *ad hoc* dialogues according to their language levels.

A positive outcome of the sessions was that the students were able to communicate in the target language, understand each other, practice their communication skills, and learn to use the appropriate phrases to check in at a hotel — all of which collectively motivated them for further studies.

MACHINIMA AS A TOOL FOR REFLECTION AND FEEDBACK

Based on observation, it was clear that some learners felt more comfortable analysing their performance in a virtual learning environment where they could hide behind their avatars and assume a different identity in their L2. The use of machinima videos was therefore an ideal tool for giving and receiving feedback. Watching the recordings of their activities helped learners to review and analyse their performance in the target language and to reflect on their own as well as other learners' performance from a distance. After this reflection phase, some learners decided to re-shoot a specific activity or role-play in order to improve their performance, an activity which was encouraged by the teacher. Another option for re-enacting productions is to provide the learners with a recording of a role-play containing speech bubbles indicating the correct language of the dialogue performed. This helps the students to compare their performance with correct phrases and gives them the opportunity to switch off the sound and reproduce the dialogue until they feel satisfied with the result. The students can then decide to re-shoot their role-play and analyse their performance with the tutor comparing their progress. Based on learners' performance, documented in the machinima, the facilitator can select language areas to be practiced, and add captions with explanations and links to further activities. In groups learners could then write a blog or wiki about their experiences and post new words and target language structures for peer review. A good indicator of an effective learning outcome is when learners engage in completing tasks by interacting and collaborating in the target language. Learners in this example clearly suggested that these skills were achievable by building upon previous knowledge and demonstrating engagement with this holistic learning experience.

CONCLUSION

The most effective and rewarding machinima videos are those that involve learners in the process of content creation. While this does not necessarily imply that learners make machinima themselves, it is likely that they are at least involved in the production process, either as part of the production team, or as an actor or extra. Although the final product is important for the learners, it is the process that is more important from the pedagogical point of view. For teachers who are not familiar with immersive environments and teach in a physical classroom, making machinima can be very time-consuming and problematic, especially if there is a lack of technical support. Audio problems or lack of bandwidth are issues often reported as challenges in terms of creating machinima for the first time. In low-technology contexts, the use and adaptation of ready-made machinima may be the best solution. Examples of resources and of machinima ready for use can be found on the CAMELOT Website (<http://camelotproject.eu/machinima-list/>) and the CAMELOT Project YouTube Channel. Where technical support can alleviate the potential problems, learning with and through machinima may be highly motivating. In addition to the many uses of ready-made machinima videos in the classroom, an ideal way of using machinima is to enable learners to review the experience, provide peer feedback, and analyse and reflect on the learning process. Given the affordances of learning a language in 3D immersive environments, learners are able to practice situations or simulations which are not possible in a physical classroom and which offer new perspectives on learning.

As data from the project's on-going evaluation of these activities indicates, machinima provide opportunities for revisiting a shared experience and enable learners to discuss and reflect on the process. Such reflective machinima do not have to be professionally produced in order to serve this purpose. Although learner-generated content may be of lower quality it can be very valuable in engaging learners in a wide

range of communicative and digital literacy skills. Professionally produced machinima involving an experienced film team would incur much higher costs, and the experience may leave language learners feeling more inhibited about their own performance.

Through machinima, error correction can be dealt with in different ways. One way involves learners viewing the dialogue and listening to it as often as they wish to and reflecting on the way the language was used. Another possibility is that the facilitator integrates feedback into the machinima by adding captions or spoken and written comments, highlighting specific areas of language, pronunciation and intonation. It is easier to deal with errors in a virtual learning environment, as learners often do not identify with them and claim that it is their avatar or character that makes the mistake and not them. Hence, learners may be empowered by acquiring more distance from their classroom-bound L2 identities and this may position them more effectively in terms of producing and reflecting on the communication they engage in.

In summary, it is apparent that machinima can be used in three main ways in the language classroom.

- 1) Teachers can use ready-made machinima uploaded from YouTube or videos that accompany their course books.
- 2) Teachers can create their own machinima.
- 3) Learners can be involved in the production of machinima.

Reflecting on their experience using machinima with their students, language teachers from the Czech Republic, Germany, Poland, the Netherlands, Turkey and the UK, identified the following benefits of using machinima.

- It presents opportunities for discussion and reflection.
- It can be used in the physical classroom as well as in a virtual learning environment.
- It can stimulate further activities (e.g., writing dialogues, role-plays, and simulations).
- It provides a wide range of genres for learners to practice (e.g., poetry, idioms, grammar, sketches, story-telling, information, and instruction).
- It provides opportunities for situational and interactional authentic language use and development.
- It can serve as a model for spoken language and offer opportunities to practice listening skills.

Further research on teacher and learner perceptions vis-à-vis integrating machinima in language activities continued until the end of the CAMELOT project in November 2015, and our final report will be made available as a result of our commitment to open access resources and materials via our website (<http://www.camelotproject.eu>). The project actively encourages reflection by welcoming teachers and institutions as network partners, both during and after the lifetime of its funded activities.

REFERENCES

- Barrett, H. (2006). Researching and evaluating digital storytelling as a deep learning tool. *Technology and Teacher Education Annual*, 1, 647.
- Brewster, M. (2009). Lights, camera, action. *English Teaching Professional*, 64, 59-62.
- Brooke, S. (2003). Video production in the foreign language classroom: Some practical ideas. *The Internet TESL journal*, 9(10). Retrieved from <http://iteslj.org/Techniques/Brooke-Video.html>.
- CAMELOT Project (2014a). Conversation with Helen Meyers at EuroCALL 2014. Retrieved from <http://youtu.be/iDhdcU-Zi1A>.
- CAMELOT Project (2014b). Interview with Liz Falconer. Retrieved from <http://youtu.be/yqc2j4-0QyM>.
- CAMELOT Project (2014c). Culture collision in Cairo – How to use Machinima in the classroom. Retrieved from <http://youtu.be/B0vRTgwbwOs>.
- CAMELOT Project (2015a). Interview with Tuncer Can, Istanbul University, Turkey. Retrieved from <http://youtu.be/rqXu4lqINVw>.
- CAMELOT Project (2015b). Interview with Malgorzata Gawlik-Kobylińska, NDU, Poland. Retrieved from http://youtu.be/J_kKqIyJ890.

- CAMELOT Project (2015c). Interview with Jana Cepickova, University of West Bohemia, CZ. Retrieved from <http://youtu.be/FWUIKmN9-fU>.
- CAMELOT Project (2015d). Interview with Zerap Yildiz, Istanbul University, Turkey. Retrieved from <http://youtu.be/NKNwKMM-u3c>.
- Ohler, J. (2007). *Digital storytelling in the classroom: New media pathways to literacy, learning and creativity*. Thousand Oaks, CA: Corwin Press.
- Schneider, C. (2014a). CAMELOT - Using and creating machinima for language teaching. International Conference: ICT for language learning Proceedings 2014. Retrieved from <http://conference.pixel-online.net/ICT4LL/files/ict4ll/ed0007/FP/0586-ICL772-FP-ICT4LL7.pdf>.
- Schneider, C. (2014b). How to use machinima in the classroom- culture collision in Cairo. Retrieved from <http://youtu.be/yBezZRHlxgg?list=UU40YZ-21PhI2-K5Nhqgr8dA>.
- Schneider, C., & Rainbow, C. (2014). *Making and using machinima in the language classroom*. London: The Round.
- Schools Media (n.d.). How do green screens work in schools? Retrieved from <http://schoolsmedia.co.uk/chroma-key/about>.
- Shrosbree, M. (2008). Digital video in the language classroom. *JALTCALL Journal*, 4(1), 75-84.

ABOUT THE AUTHORS

Michael Thomas is an Associate Professor at the University of Central Lancashire, UK. He has previously taught at universities in Germany and Japan and authored or edited 14 books. He is lead editor of the book series *Digital Education and Learning* (Palgrave) and *Advances in Digital Language Learning and Teaching* (Bloomsbury). Email: mthomas4@uclan.ac.uk

Christel Schneider is founder and managing director of CSiTrain. Prior to this she was managing director for an international language association (ICC) and a visiting lecturer at Hamburg University. She is a qualified online trainer and since May 2014 has been working as a Research Assistant for the CAMELOT Project at the University of Central Lancashire. Email: chris.schneider@csitrain.net

Figure 1. Checking-in at the hotel



Front Desk

Figure 2. Avatars interacting in a dialogue

